Aug 30th, 11:30 AM - 11:45 AM

Repeated applications of Callisto and Devrinol on newly planted cranberry vines

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Repeated applications of Callisto and Devrinol for new plantings

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To remain competitive

- Growers replant every 20-25 yr.
- Takes ~ 3-6 years to reach full production.
- **Weed management** promotes quick, maximum colonization.


Mature Planting
Section prepared for planting


Multi-disc planter pushing vines in

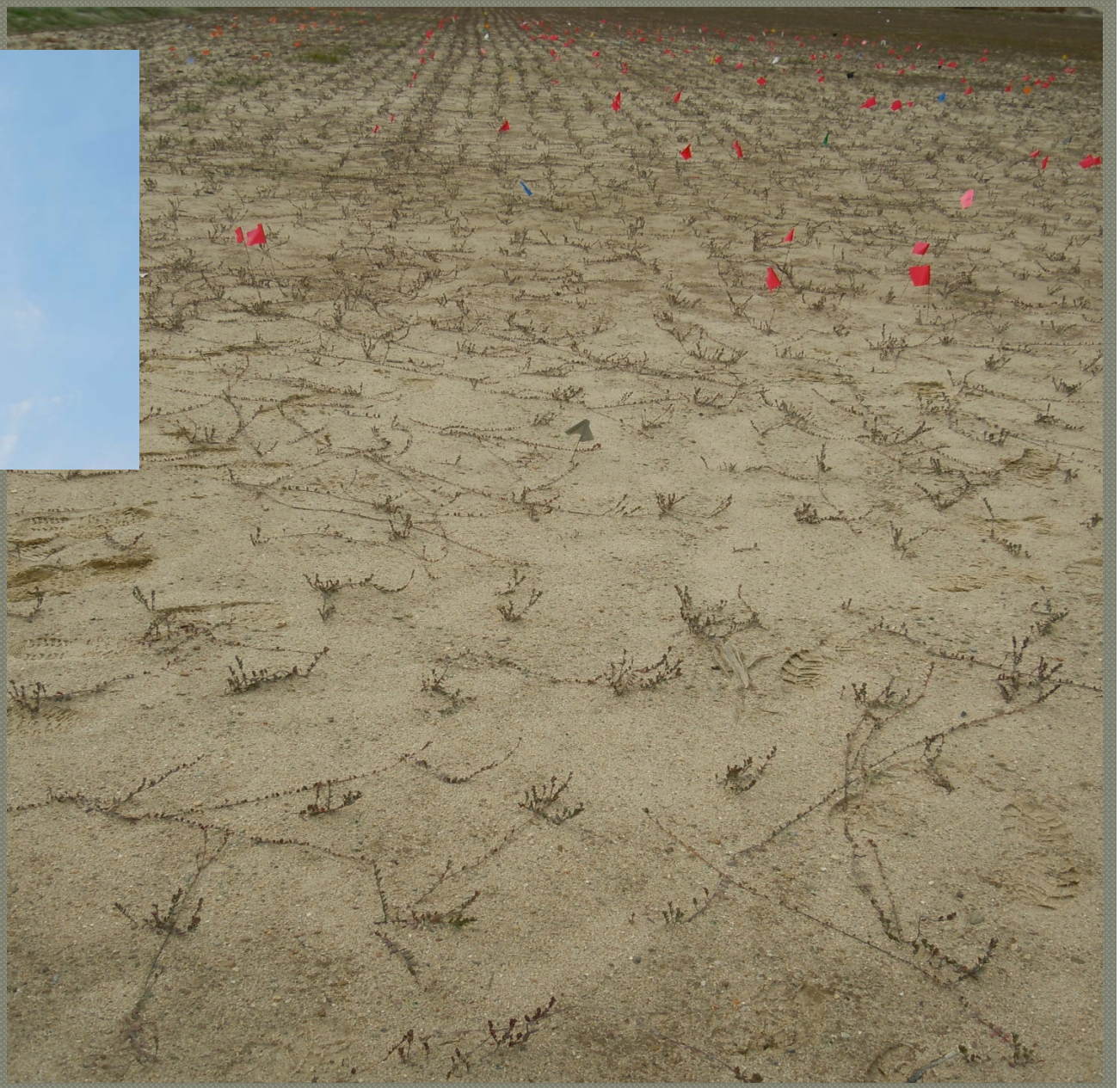
Disked-in, unrooted vines

First year, end of season

Rooted plugs at 1-ft intervals

Evergreen Nurseries, WI

NP2 2011
End of
first yr



Weed Management Options

- **Mesotrione**
  Callisto

- **Napropamide**
  Devrinol 50DF

Devrinol 10G had been industry standard

Study Format

- **6 2-yr MA study sites** (2009-12)
  - 3 new plantings (NP)
  - 3 second-yr plantings (SY)
- **Annual treatment / monitoring**
- **10 treatments, RCBD, 5 reps**
  - 2 x 4 m plots, except SY plots in 2009 (2 x 7 m)

Cultivars

- NP1 = Demoranville (new hybrid)
- NP2 = Mullica Queen
- NP3 = Stevens (traditional hybrid)

- SY1 = Stevens
- SY2 = Stevens
- SY3 = Crimson Queen

Plugs vs Unrooted cuttings

Treatments (10 total)

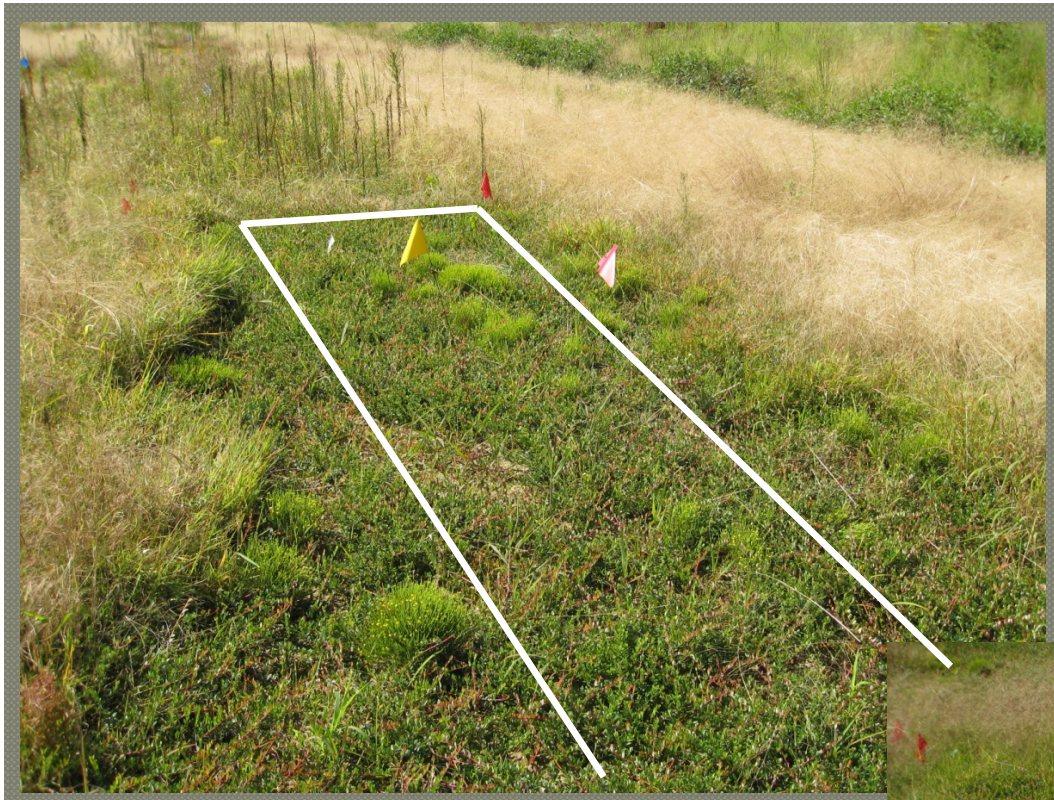
- **Dev** (low / high rates)
  - 3.36 kg/ha applied 1, 2, or 3x
  - 3.36 kg/ha once fb Cal
  - 5.05 kg/ha applied 1x or 2x
  - 5.05 kg/ha once fb Cal
- **Cal** 210 g/ha, once or twice
- **Untreated**

Application & Data Collection

- CO_2 backpack sprayer.
- Chemigation rates: 3,735 L/ha.
- Biomass collected annually.
  - Cranberry and weeds
- Annual visual assessments of weed cover, species abundance.

Overall Field Trial

SY1: 2 x 7 m, June 30, 2009



Callisto 2 app
SY1
2 x 7 m; Aug 27, 2009

Untreated

Monocots (g/m^2)

TRMT	NP	SY – Y1	SY – Y2
UNT	73 a	394 a	145 a
Cal-x1	33 b	55 b	24 b
Cal-x2	28 b	22 b	11 b
Dev-H fb Cal	14 b	39 b	9 b
Dev-H x1	36 b	88 b	62 ab
Dev-H x2	12 b	85 b	36 b
Dev-L fb Cal	14 b	41 b	14 b
Dev-L-x1	28 b	133 b	28 b
Dev-L-x2	11 b	60 b	55 ab
Dev-L-x3	2 b	82 b	31 b
P-value	0.005	<0.0001	0.004

* Now similar to UNT

Total Weeds (g/m^2)

TRMT	NP	SY – Y1	SY – Y2
UNT	98 a	413 a	153 a
Cal-x1	43 b	75 cd	34 bc
Cal-x2	40 b	71 d	32 bc
Dev-H fb Cal	36 b	62 d	24 c
Dev-H x1	60 ab*	140 bcd	110 ab
Dev-H x2	40 b	158 bc	63 bc
Dev-L fb Cal	29 b	69 d	24 c
Dev-L-x1	59 ab	176 b	82 abc
Dev-L-x2	43 b	132 bcd	95 abc
Dev-L-x3	23 b	145 bcd	75 abc
P-value	0.015	<0.0001	0.026

Overall Results

- At NP, Multiple appl. reduced
  Monocot biomass > Single appl.
- At SY, Cal-only reduced
  Total biomass > Dev-only.
  - Based on single df contrasts

Overall Results

- Correlation analysis indicated Monocot biomass was:
  - Positive for TOTAL weed biomass
    - Accounted for 77% and 84% of variance for NP and SY, respectively
  - Negative for CB biomass
    - But only accounted for 22% of variance

Overall Results

- No negative impact on cranberry vine colonization (biomass).
  - BUT: poorest growth with new hybrids
  - Lack of grower experience ??
  - Cultivar choice, vine health and status (rooted or not), nutrient & water management may play larger role in initial / rapid colonization than weed suppression

Overall Results

- No improved cranberry growth where weeds were controlled
  - trmt effects NS for CB biomass.
    - Study too short ?
    - Weed control / biomass may not be easily or quickly converted to measurable changes in perennial vine growth.
    - Impacts on yield of most interest.

Take-Home Message

- Given complementary range of efficacy of Dev and Cal, a combination PRE-POST program of Dev-L fb Cal may be most cost-beneficial.
- When cost is limiting, a single Cal should be used since it consistently resulted in less weed biomass.

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Questions ?